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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/757,821

01/15/2004

Jung Ho Kang

SUN-DA-138T

5400

23557 7590 02/21/2007  
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EXAMINER

JEFFERSON, QUOVAUNDA

ART UNIT

PAPER NUMBER

2823

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/757,821	Applicant(s) KANG, JUNG HO	
	Examiner Quovaunda Jefferson	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. <u>20070216</u> .                           |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date <u>12/05/06</u> .  | 6) <input type="checkbox"/> Other: _____.                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 26, 2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabery et al, US Patent Application Publication 2003/0052084, in view of Frenette et al, US Patent 5,770,490 (as cited in previous office action).

Regarding claim 1, Tabery teaches a method of making a monitoring pattern of a shallow trench isolation profile comprising of forming a first pattern **502** on a substrate **500** to monitor a depth of a first shallow trench isolation, and wherein the first pattern includes a plurality of nonequally spaced active regions **504, 506, 508** on the substrate, wherein the distance between the plurality of active regions are unequally spaced (figure 5 and [0063]).

Tabery fails to teach forming a second pattern on the substrate to measure electrical effects associated with a depth and a profile of a second shallow trench isolation, wherein the second pattern includes a plurality of unequal active regions on the substrate, and a plurality of gates that are formed on the equally spaced active regions, wherein the gates do not contact the first pattern.

Frenette teaches forming a second pattern **40, 42** on the substrate to measure electrical effects associated with a depth and a profile of a second shallow trench isolation **10**, wherein the second pattern includes a plurality of equally spaced active regions (**area between isolation regions 10**) on the substrate, and a plurality of gates **20, 22** that are formed on the equally spaced active regions, wherein the gates do not contact the first pattern (Figure 3. Note: the first pattern is the photomask used to pattern the isolation trenches; a method for forming the isolation trenches is taught by Tabery) as a method of forming a source/drain region, which combined with the gate

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electrode, forms a transistor, which is needed in order for current to flow within a semiconductor device.

It would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Frenette with that of Tabery to form a conventional source/drain region which combined with the gate electrode, forms a transistor, which is needed in order for current to flow within a semiconductor device.

Regarding claim 2, Tabery teaches the depth and the profile are monitored according to density and size of the first patterns [0063, 0065]. Tabery fails to teach teaches the depth, the profile and the electrical effects are monitored according to density and size of the second pattern. However, Frenette further teaches the depth, the profile and the electrical effects are monitored according to density and size of the second pattern (column 3, lines 3-9).

Regarding claim 3, Tabery teaches the depth and the profiles are monitored using a single monitoring pattern [0063, 0065].

### ***Response to Amendments and Arguments***

Applicant has amended claim 1. No new claims were added nor any claims cancelled. Claims 1-3 are pending. Applicant's arguments with respect to newly

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amended claim 1 in view of the references cited in the previous office action have been considered but are moot in view of the new ground(s) of rejection.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quovaunda Jefferson whose telephone number is 571-272-5051. The examiner can normally be reached on Monday through Friday, 8AM to 4:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QVS  
QVJ



FERNANDO L. TOLEDO  
PRIMARY PATENT EXAMINER